NATIONAL LIBRARY OF MEDICINE
Health, Education, and Welfare, Public Health Service, U.S. Department of, Bethesda, Md.

NATIONAL LIBRARY OF MEDICINE
National Institutes of Health, Public Health Service, U.S. Department of Health, Education, and Welfare, Bethesda, Md.

LIBRARY OF MEDICINE
BETHESDA 14, MD.

NATIONAL LIBRARY OF MEDICINE

REPORT ON SCIENTIFIC AND TECHNICAL COMMUNICATIONS

I. Activities during FY 1962

A. Intramural Activities

1. Organizational Summary. The National Library of Medicine's mission is summarized in the language of the Act establishing it--"to aid the dissemination and exchange of scientific and other information". As the Library's name indicates, the mission is national in scope, and is not limited to support of Public Health Service operations or those of the Federal Government, although the NLM functions as a member of the PHS team, and acts in an advisory capacity in areas of its competence. The primary audience of the Library is the membership of the health professions in the United States.

Being a library, NLM is interested almost exclusively in the printed word, the published record, and in those problems auxiliary to its effective transmission, as technological developments in communication practice, personnel training, and resource requirements of the national medical library network in which NLM stands as a central focus.

The activities of the Library are carried out by five operating divisions. These are 1) the Technical Services Division, which performs the function of acquiring and cataloging the output of the world medical press; 2) the Bibliographic Services Division, which prepares the major bibliographic search tools which the Library has been publishing, in one form or another, for almost a century; 3) the Reference and Circulation Division, which is responsible for providing services to readers who visit the Library and for filling the large number of requests for interlibrary loans received; 4) the History of Medicine Division, which has custody of the great historical collection of books, manuscripts, and prints, and 5) the Office of the Director, which has as its main subdivisions a) Administrative Services, under the Library's Executive Officer, and b) the Extramural Program, under the cognizance of the Library's Deputy Director.

The overall management and policy guidance of the Library is subject to the scrutiny and review of the NLM Board of Regents, advisory to the Surgeon General. The Board consists of 7 ex-officio members, including the four Surgeons General of the uniformed forces, the Medical Director of the Veterans Administration, an Assistant Director of the National Science Foundation, and the Librarian of Congress, and 10 members appointed by the President, for terms of four years each, chosen from persons prominent in the various fields of medicine. It has been customary for this Board to meet semiannually, in the spring and fall. The current Chairman of the Board is Dr. Warner L. Wells, Professor of Surgery at the University of North Carolina, and a distinguished author, editor, and translator.

It is convenient to divide the intramural activities of the Library into two segments rather than into the five segments related to its formal organizational structure. These two segments may be identified as the one

which pertains to the various means employed to provide physical access to the literature of medicine, and the one which pertains to the provision of bibliographic access to the literature of medicine.

Bibliographic access embraces the areas of cataloging, indexing, and bibliographical listing, and the publication and dissemination of the resulting products. It responds to the question "What materials exist that are directly pertinent to the subject of my inquiry?" The nature of the problems of bibliographic access and the means available for their solution lend themselves readily to centralization. This is what the Library is attemting to do--to compile centrally, and distribute widely, the bibliographic record of medicine, so that all members of the health professions, wherever they may be, may have knowledge of what of interest to them is appearing in the world literature.

Physical access embraces the area of acquisitions, at one end of the line, and as a representative area at the other end, the provision of interlibrary loans. Only a universal acquisiton program such as NLM's can at once provide the base for a universal bibliographic record, and at the same time provide the rich and broad store of materials on which lesser libraries may rely for the provision of works which lie on the more exotic side. Provisions for physical access respond to the question "How can I put my hands on these items known to be pertinent?" Here the problem can be suitably fitted only to a decentralized arrangement of facilities. The fundamental characteristic of the printing press is that it provides multiple copies, which may be stored in multiple locations, convenient to the needs of users spread over wide geographical areas. The interlibrary loan program of the Library, enormous as it is, can properly be conceived of as a central facility which functions only as a very necessary supplement to the basic decentralized stores of the medical library network.

2. Activities Summary

a. Original articles and monographs

1) Index Medicus

In FY 1962 the Library indexed over 150,000 medical articles, and these citations appeared on an average of 5 times each in the Index Medicus, under multiple subject and author rubrics. The publication appears monthly, and the print order is 7500 copies. Approximately 900 copies are distributed free to Federal medical installations; another 900 copies are used for exchange purposes, i.e., to insure receipt of foreign publications; the balance of the copies are subscribed to through the Superintendent of Documents at a price of $20 per year. The Library invests about 20% of its manpower and 20% of its funds into this one operation.

2) Bibliography of Medical Reviews

For the past 6 years the Library has published this annual listing of the review literature of medicine. The volume published in 1962 was a cumulative volume, and contained some 20,000 subject entries.

3) National Library of Medicine Catalog

This compilation has been published annually since 1949, and has been cumulated at five year intervals. It represents the record of books and journals which are cataloged in the Library. The volume for calendar year 1961 contained entries for 20,260 works in 32 languages. It is published for NLM by the Library of Congress, and sells for $20 a copy.

4) Index Catalogue

In 1880 John Shaw Billings began publication of his mammoth Index Catalogue of the Library. The decision to bring this compilation to an end was reached in 1950; the Library publications noted above were conceive as its successors. The last two volumes of the Index Catalogue, volumes 60 and 61, were published in FY 1962. Altogether, the 61 volumes of this work organize some 5,000,000 references to the literature of medicine accumulated during the five centuries since the invention of printing.

5) Biomedical Serials, 1950-1960
PHS Publication No. 910. 503p.

This work lists titles and holdings information on 8900 substantive serials received by the Library during the decade. It has been widely hailed by medical librarians everywhere as an essential tool.

6) Early American Medical Imprints

This work records 2105 medical works printed in the United States between the years 1668 and 1820, and the several libraries in which copies are held.

7) Russian Surgical Staplers

PHS Publication No. 871. 47p. Contains 120 abstracts of Russian journal articles on stapling devices and suturing techniques.

8) Original Articles

The following articles by members of the NLM staff appeared during FY 1962:

E. Brodman, Memoir of Robert Fletcher
C. Roos, Physicians to the Presidents...a Biobibliography
E. Moseley, Medical Dictionaries and Studies of Terminology
G. Schiffmann, National Medical Bibliographies
R. MacDonald, Recataloging
L. Falk & S. Lazerow, Comprehensive Collecting
D. Schullian, Adams Jewett and John Shaw Billings
E. Blair, Medical Newspapers

Many of these appeared in a special NLM anniversary issue of the Bulletin of the Medical Library Association which was edited by the Library's Director.

b. Pamphlets and brochures

1) Toxoplasmosis

A bibliography covering western literature between 1950-1960

2) NLM Building Data and Floor Plan

A pamphlet describing the Library's new facilities

3) NLM Guide to Services

A periodic revision of a basic Library pamphlet.

c. Conferences and symposia

None

d. Audio-visuals

Shooting for an orientation film on the National Library of Medicine began; the producer is CDC. Completion date: June 1963, in time for premiere at Second International Congress on Medical Librarianship, to be held in Washington.

e. Radio

None

f. Journals

None. The Index Medicus, listed under a above, might have been listed here instead.

g. Contracts

1) Research in Communications

(a) Two large contracts for the MEDLARS program were let during FY 1962. The contract for MEDLARS Phase I, Preliminary Design Considerations, was for $85,000. The contract for MEDLARS Phase II, Detailed Design of the System & Development of Graphic Arts Composing Equipment, was for $954,000. A description of the MEDLARS project is pertinent here, as it has accounted for a large part of the Library's effort during 1962.

MEDLARS stands for Medical Literature Analysis and Retrieval System. At the heart of MEDLARS will be a digital computer. Information will be fed into the system through punched paper tape, representing the indexing done by the ~~Library~~ DIVISION staff. This information is converted to magnetic tape and manipulated in the computer. The magnetic tape so

processed is used to activate a very high-speed composing device capable of producing photographic masters for printing. Three types of products will be derived from MEDLARS. First, it will provide increased high-speed composition capacity for the production of the Index Medicus. Second, it will provide recurring bibliographic listings of references selected in accordance with the predetermined requirements of particular research fields; for example, it will supply a weekly listing of the world's medical literature on cardiovascular disease to that research group for its dissemination. Third, it will provide search and retrieval capacity to answer on demand queries from individual research installations concerning newly published information bearing on their immediate problems. In its first year of operation, MEDLARS will contain 180,000 references; this will increase by annual increments up to the point where over a million references will be stored on magnetic tape for searching. MEDLARS will turn out 50 recurring bibliographies of varying periodicity, and it will accept up to 90 complex demand search questions daily. On successful completion of this project, scheduled for the fall of 1963, the medical sciences in the United States will have access to a powerful bibliographic search tool equaled by none in the world.

Contract PH - 86 - 62 - 8 -$ 85,000
Contract PH - 86 - 62 - 114 -$954,029

(b) The Library contracted with the Institute for Advancement of Medical Communication in August 1961, for the purpose of surveying the effectiveness of the Russian Scientific Translation Program. The study attempted to measure the quality of Soviet research papers through parallel refereeing by American editors, and to estimate the use made of the translated material to date.

Contract PH - 86 - 62 - 9 -$ 17,656

2) Activities in Communications

Tabulated below are a number of contracts established for the purpose of continuing the Scientific Translation Program. These represent for the most part the procurement and distribution of translations from the Soviet biomedical literature.

The major contract (PH-86-62-159) with the Federation of American Societies for Experimental Biology, established a comprehensive program for the selection by American editors of significant Soviet research papers, and their re-publication in translation in a new recurring supplement to Federation Proceedings.

Contracts and Purchase Orders - 1962

Number	Contractor	Subject	Date Issued	Cost
SA-43-ph-3031 (Suppl.agr.#6)	Consultants Bureau Enterprises, Inc.	Translation of: Biochemistry, Bull. of Experimental Biology and Medicine	12/1/61	$ 25,900
P.O.-312	Joint Publications Research Service	Translation of four (4) items. 1/	4/20/62	3,567
P.O.-321	Office of Technical Services, Department of Commerce	Bibliography of Medical Translations, 1/59-12/61	5/1/62	1,775
(supplement)	"	" 1/62-6/62	6/12/62	325
PH-86-62-159	Federation of American Societies for Experimental Biology	Procurement, selection & publication of foreign scientific research information	6/20/62	170,000 (est.)
PH-62-393	Consultants Bureau Enterprises, Inc.	500 copies of journal: Biochemistry	6/21/62	8,750
PH-62-396	American Institute of Biological Sciences	Purchase of multiple copies of four books 2/	6/25/62	10,000

1/ 1. Nikitin, B.M. and I.N. Petukhov, compilers
Scientific Bases of Physical Education and Sport
2. Zhdanov, D.A., editor
Problems of Functional Morphology and the Motive Apparatus
3. Ivanitshkii, M.F., editor
Collection of Scientific Works of the Chair of Anatomy
4. Archives of Anatomy, Histology, and Embryology
1961, #10 (separate)

Total pp. 763, comprising 247,756 words

2/ 1. Ukhtomskii, A.A. - Selected Works
2. Vedenskii, N.E. - Selected Works
3. Sokolov, E.N. - Perception and the Conditioned Reflex
4. Voronin, L.C. et al. - Oriented Reflex and Exploratory Behavior

h. Other

1) One of the largest of NLM operations can only be dealt with under this saving rubric. This is the photoduplication program, the chief instrument in the interlibrary loan area. In FY 1962 NLM responded to over 125,000 requests for interlibrary loan. Of these, more than 108,000 requests were filled by providing photoduplicates of the requested material. This amounts to the filling of such requests at the rate of almost one per minute for every minute of every working day throughout the year. Through this mechanism, some 2,000 libraries around the world received 2,244,000 pages of material (up 8% over the previous year). One in eight of these "loans" went to libraries overseas. About 12% of the Library's funds are committed to this single activity.

2) During FY 1962, Library staff served in a consultant capacity, or participated in, the following activities related to the communication of scientific information.

Staff Participation

Scientific Communication Activities

Functions	Library representative	Activity	Date
Gordon Research Conference	Dr. F. B. Rogers	Talk on abstracting & indexing	July 2-6, 1961
Civil Service Commission	Miss W. Sewell	Plan program on automatic data processing in libraries	August, 1961
Armed Services Technical Information Agency	Miss W. Sewell	Evaluation of ASTIA thesaurus - revision of ASTIA	August, 1961 Oct. 17-18, 196 Jan. 15, 1962
Pacific Science Congress (Sec. 10-Scientific Information)	Mr. S. Adams	Paper on biomedical library resources of the Pacific area distributed copies of a medical library directory.	Aug. 21-26, 196
Aerospace Industries Assoc.	Miss W. Sewell	Session on thesaurus compatability	Sept., 1961
PMA Literature Committee-NSF meeting	Mr. S. Adams Mr. S. Taine Miss W. Sewell	Discussion of future cooperation with PMA group.	Sept. 22, 1961 Oct. 1961
Advisory Committee on Automation for the Library of Congress	Dr. F. B. Rogers	Member	Oct. 16, 1961

(Continued)

Functions	Library representative	Activity	Date
National Science Foundation-Science Information Council	Dr. F.B. Rogers	Member	Oct. 19-20, '61 Mar. 12-13, '62 June 24-25, '62
PHS Mission to Polish Ministry of Health	Mr. S.Adams	Participant	Oct. 9-13, '61
International Seminar for medical Documentation and Statistics	Mr. S. Adams	Participant	Oct. 1961
Division of International Health Seminar on PL 480 Programs	Mr. M. Hoseh Mr. S. Adams	Subject: coordinating PL 480 programs	Nov. 1961 April 1962 May 1962
Ad Hoc Interagency Study Group on Language Compatability in Mechanized Storage and Retrieval Systems	Miss W. Sewell	Participant	Nov. 1, 1961 Jan. 15, 1962
American Documentation Institute	Mr. S. Adams	Moderator for panelon published indexes Preparation of "State-of-the-art" Symposium	Nov. 6- 8, '61 Sept.28, 1961
Joint Meeting of Phila. and N. Y. Regional MLA group	Mr. S. Adams	Discussion on problems of the Science Translation Program	Nov. 18, 1961
National Advisory Health Council	Dr. E. B. Rogers	Relation of NIH and NLM communication support interests	Nov. 21, 1961
Division of Medical Sciences, NRC	Mr. S. Adams	Discussion of Library's present and potential role in the improvement of medical communication	Nov. 28, 1961
International Panel of the President's Committee on Mental Retardation	Mr. S. Adams	Advisor	Nov. 30, 1961

(Continued)

Functions	Library representative	Activity	Date
Surgeon General's Conference	Dr. F. B. Rogers	MEDLARS and library affairs	Dec. 4, '61 Jan. 19, '62
Office of Program Planning, NIH Staff Conferences	Mr. S. Adams	Participation in report NIH involvement and responsibility in scientific communication	Dec. 1961
Mayo Foundation Lecture	Dr. F. B. Rogers	Electronic Devices and Problem of Storage and Retrieval of Medical Literature	Jan. 25, '62
Conference of Biological Editors, New Orleans	Mr. S. Adams	Establishing CBE Committee on Bibliographic Standardization; Study group on review papers; Seminar with Latin American Editors. Host to CBE meeting	Feb. 1962 1963
U.S. National Committee on the International Federation of Documentation	Mr. S. Adams	Represented NLM	Feb. 1962
Advisory Committee on Computers in Research, Bethesda	Mr. S. Adams	Member, with interests in storage and retrieval problems	
President's Science Advisory Council panel on Scientific Information, New York	Dr. F.B. Rogers Mr. S. Adams	Describe NLM's programs related to information services	Mar. 14, 1962
NFSAIS Boston	Mr. S. Adams Mr. M. Hoseh W. Sewell	Proposals for long range development and coordination of scientific abstracting systems	Mar. 28-30, '62
Project site visit to Center for Documentation Research, WRU	Mr. S. Adams	Member ACCR	Apr. 1962
American Standards Association Committee, Subcommittee on Transliteration	Mr. M. Hoseh	Member	Apr. 1962 May 1962

(Continued)

Functions	Library representative	Activity	Date
District of Columbia Library Association	Mr. S. Taine	Talk on MEDLARS	Apr. 26, '61
Excerpta Medica Foundation, Amsterdam	Dr. F.B. Rogers	International meeting on the modernization of medical documentation	May 13, '62
Special Libraries Association	Mr. W. Sewell Mr. S. Taine	Talk on "Subject Heading Work with MEDLARS" Introduction to MEDLARS	May 27-31, '62
Workshop Information Systems Design UCLA Conference Center Lake Arrowhead, Calif	Dr. F.B. Rogers	Participant	May 29 - June 1, 1962
Special Study Section (NIH)	Mr. S. Adams	Chairman of Ad hoc Committee to Review grant applications related to indexing and publication	May 1962
Ninth Conference of Cardiovascular Training Grant Program Directors, Colorado Springs	Dr. F. B. Rogers	Address	June 9, 1962

Staff Participation

Scientific Communication Activities

Library Related

Functions	Library Representative	Activity	Date
Association of Research Libraries, Cleveland	Dr. F. B. Rogers	Appointed to represent ARL Advisory Committee charged with planning reorganization of ARL	July 8. 1961
		Committee meeting New York	July 28, 1961
Joint Committee of the union list of serials, Cleveland	Dr. F. B. Rogers	Chairman of annual JCULS meeting	July 11, 1961
United Nations Library New York	Dr. F. B. Rogers	Consultant	July 15, 1961 July 31, 1961
International Conference on Cataloging principles, Paris, France	Miss R. MacDonald	Member	Oct. 9-20, 1961
Executive Board Special Libraries Association, N. Y.	W. Sewell	Member	Sept. 1961
Committee on Procurement of Foreign Publications, USIB	Dr. F. B. Rogers	Member	Oct. 24,1961
MLA, Southern Regional Group Meeting, Austin, Texas	Miss M. Langner	Program participant	Oct. 20-21, 1961
Science Information Officers Meeting	Dr. F. B. Rogers	Monthly meeting	Nov. 1,1961
Dedication Ceremonies for Hammarskjold Library, UN	Dr. F. B. Rogers	Paper on Acquisition Principles in Special Collections	Nov. 16-18, 1961
Committee on Biological Handbooks, NRC	Dr. F. B. Rogers	Member	Nov. 27, 1961

Functions	Library Representative	Activity	Date
Council of the National Library Associations, NY	W. Sewell	Member	Nov. 17,1961
Federal Information Officers' luncheon meeting	Dr. F. B. Rogers	Member	Dec. 19,1961
Association of Research Libraries 58th Annual Meeting, Chicago	Dr. F. B. Rogers	Represent NLM	Jan. 28-29 1962
ALA Committee Meetings Chicago	Dr. F. B. Rogers	Member	Jan. 30-31, 1962
Midwest Regional Library Association Meeting, Chicago	W. Sewell	Present talk	Feb. 2, 1962
Executive Board Meeting of SLA Dearborn, Mich.	W. Sewell	Member	Feb. 15-17 1962
Association of Research Libraries, Miami Beach	Dr. F. B. Rogers	Member	June 16,1962
American Standard Association, Z 39 Subcommittee on Journal Title Abbreviations	Mr. S. Taine	Participant	Mar. 27,1962
American Standards Association, Z 39 Subcommittee on Cyrillic Transliteration	M. Hoseh	Participant	
Medical Library Association, Chicago	Dr. F. B. Rogers	President	June 3-8, 1962

B. Extramural Activities

1. Organizational Summary. The scope of the Library's extramural programs has been sharply limited in the absence to date of adequate authorizing legislation and appropriations. The activities reported below should, therefore, be considered as prototypes of the planned support activities described in Section II of this Report.

History

In response to the recommendations of the Jones Committee (Federal Support of Medical Research, p. 94-95), and of the Study Group on Organization and Functions of the Public Health Service (p. 53), the Library established an Extramural Program for the improvement of medical communication in the fall of 1960. Subsequently, it took the following actions to implement the Program.

a. Draft of a program proposing support for scientific publication, for the strengthening of medical libraries, for education and training, and for research and development in new communication practices.

b. The securing of clearances and endorsements of this Program by the Library's Board of Regents, the Surgeon General's Office, and appropriate PHS Bureaus and Divisions.

c. The submission of a preliminary budget in FY 1963, subsequently denied by the Department in the absence of legislative authority.

d. Submission of specifications for new authorizing legislation in September 1961.

e. Submission and approval of a new mission and function statement incorporating the Program in the Library's administrative structure.

f. Transfer from the Division of General Medical Sciences, NIH, of the Russian Scientific Translation Program, effective July 1, 1961.

g. Activation, with the cooperation of the NIH, of a new publication support program.

As of July 1962, the Science Translation Program alone has had operational experience with granting mechanisms; discussion of all other aspects of the Program is therefore deferred to Section II of this Report.

Philosophy and Policies

The Science Translation Program serves as a principal focus within the PHS for meeting the needs of the American medical research community for access to the reports of foreign medical research published in infrequently

read languages. It is therefore broadly oriented to the improvement of international communication in the biomedical sciences at the research level.

While the translation of research papers, monographs, and journals is a principal activity, the Program is concerned with strengthening of related practices of value in international communication: the preparation of review papers; the provision of abstracts of the foreign literature; and the provision of various devices such as directories and dictionaries which may make foreign research reports more readily available to American scientists.

In doing so, it draws sharp lines between those functions which may have value to the intelligence community engaged in estimating total foreign potentials, and those functions which advance basic scientific knowledge toward the solution of biomedical research problems.

By historical accident, the Program concentrated on communication activities related to the Soviet biomedical literature; it is currently seeking a broader base. The Program will be concerned with meeting the needs of American researchers for significant new information published in languages read by small percentages of American scientists. Thus, it will be concerned with the Japanese or the Czech literature, as well as the Soviet.

The Program operates in cooperation with responsible research societies and groups, within and outside the Service, and delegates insofar as possible the determination of specific needs of the research community to such groups.

The Program has two sub-programs. It conducts, through grants and contracts (reported under Intramural Activities), support of domestic activities with appropriated dollars; and it conducts, in cooperation with the National Science Foundation, the Service's foreign currency communication program authorized under Section 104 k of Public Law 480.

Organizational Mechanisms

The Science Translation Program is established as a unit in charge of a Program Officer under the Program Director for Scientific Publications, where it will be co-equal to other Program units for the support of primary and of secondary publication to be established in the future.

The domestic translation program, during its first year of operation, had close liaison with the Division of General Medical Sciences, NIH. In the absence of grant authority in FY 1962, DGMS retained responsibility for funding and administering grants, making a comparative transfer of funds for direct operations only. The Library has requested both funds and authority under Section 301 for the conduct of the Program in FY 1963, and has requested a delegation of authority from the Surgeon General for the conduct of the Program.

The Library will accomplish the preliminary review of grant applications for scientific translation activities through the newly established Advisory Committee on Publications (see Section II). In the absence of specific authority for the Library's Board of Regents to recommend grants to the Surgeon General, the Library intends to use channels afforded by the National Advisory Health Council for this purpose in FY 1963.

The Science Translation Program avails itself regularly and informally of scientific advice available in the laboratories and divisions of the PHS with respect to the scientific merit of specific proposals.

The Program is in frequent contact with other units of the PHS (and other government agencies) for a number of purposes. For example:

a. Division of International Health, for advice on the political or protocol aspects of projects.

b. The service translation unit at NIH, for suggestions and comment related to selection.

c. NIH Laboratory Chiefs in relation to requirements.

d. National Science Foundation, Atomic Energy Commission, National Aeronautics and Space Administration, for coordination with comparable ongoing programs.

e. Central Intelligence Agency, for purposes of coordination and information.

The foreign currency translation program has been directly administered by the Library over the last five years. It has been conducted jointly, and in close cooperation with, the comparable program in the National Science Foundation, which by determination of the Bureau of the Budget budgets currently for all executive agencies with the exception of HEW.

For the purpose of this report, the foreign currency translation program, although it uses contracts rather than grants as its primary mechanism, is considered in the extramural category.

Section 104 k of Public Law 480 authorizes two functions: first, the indexing, abstracting, and translation of foreign scientific literature to improve international communication in the sciences; and second, the conduct of research activities. The Library conducts operations on behalf of the PHS under the first function; the Office of International Research, NIH, and other Divisions throughout the Department conduct programs under the second, under the coordination of the interbureau P.L. 480 Seminar.

With the enactment of Public Law 86-610, the International Medical Research Act of 1961, the Department requested the Library to submit its foreign currency appropriation requests through Departmental channels. Accordingly

in FY 1962, the Library assumed responsibility for funding. In order to achieve maximum economies, it achieved a memorandum agreement with the National Science Foundation, through which it transferred foreign currencies in Poland, Israel, and Yugoslavia ($580,000 of the $667,000 appropriated) for further implementation of contracts established in these countries by the Foundation. The Library is therefore responsible for the following functions:

a. Budget estimates - budget is defended by OIR/NIH.

b. Programming - selection of materials for translation; adequacy of scientific editing; distribution of translations.

c. Coordination with other PHS foreign currency programs.

The National Science Foundation is responsible for:

a. The development of service contracts for translation and related activities.

b. The administration of these contracts.

c. The management of supplementary distribution mechanisms established through the Office of Technical Services, Department of Commerce.

In practice, the NLM solicits suggestions for translation from both governmental and non-governmental research groups, using the Program to supplement, but not displace, its dollar-based domestic program. For example, it programmed for an agreement with the Ministry of Health, Poland, for the original publication in English (instead of Polish) of five Polish biomedical journals. NLM then places this requirement on NSF under the terms of the memorandum agreement; NSF requisitions the translation from the overseas contractor; NLM assists (if required) in providing adequate scientific editing for publication; the contractor publishes the translation, delivers 1,000 copies to OTS, who distributes 500 copies to NLM selected depositories, and maintains the balance of the stock for sale to individual American scientists.

NLM retains the balances of the foreign currency appropriations not transferred to NSF for further international communication projects unrelated to translation activities.

Liaison is complicated, involving both political and administrative channels. Among the offices with which the Program works are: Office of the Science Adviser, and appropriate geographic desks in the Department of State; foreign embassies and offices within foreign governments; Office of International Research, NIH; Division of International Health, PHS.

Policy Formulation and Clearance

Since the translation programs were initially inspired as much by political urgency as by scientific need, policy formulation and clearance have an added dimension. The following presents a case study of a fundamental change in translation support policy which occurred during FY 1962.

When the Russian Scientific Translation Program was first established in 1956, it borrowed certain mechanisms, such as the cover-to-cover translation of Soviet biomedical research journals, from other agencies. It did so with an understanding, shared by all contractors and grantees, that the use of these mechanisms was experimental, that their impact would be tested over a period of five years, and the program adjusted accordingly.

Over the five years, the Program became increasingly skeptical of the effectiveness of the cover-to-cover journals, while commercial interests became increasingly annoying to PHS administrators. Accordingly, the NLM, in assuming responsibility for the Program in July 1961, took the following steps:

a. Conditioned its acceptance on the making of a field survey, and informed PHS officials of this intention.

b. Contracted with the Institute for Advancement of Medical Communication for an evaluation of the Program's effectiveness to date.

c. Discussed the results of this survey with officials in DGMS; Office of the Director, NIH; Surgeon General's Office.

d. Discussed the survey with a staff member of the Senate Subcommittee on Reorganization and International Organizations, and with a Committee member of the House Small Business and Un-American Activities Committees.

e. Submitted a memorandum to the Surgeon General summarizing the situation, indicating new policy for the Program, and suggesting clearance with the Senate Appropriations Committee.

f. Discussed the policy change at meetings of professional groups concerned.

g. Prepared a PHS announcement for publication in research and professional journals.

The new policy involves the abandonment of support for the cover-to-cover translation of Soviet research journals, and the substitution of an arrangement whereby the Federation of American Societies for Experimental

Biology will provide selection, editorial, and distribution services in a more direct response to the needs of American scientists.

2. Activities Summary

a. From its beginning in FY 1959 through FY 1962, the Science Translation Program has funded thirteen grants for a total of $598,121. These all relate to scientist-to-scientist communication.

There are six grants currently active, for a total obligation in FY 1962 of $141,575. The Program reconversion described earlier resulted in a suspension of programming activities, with a resulting decline in new applications. The above obligations represent continuation support.

The Library does not distinguish by object class in its budget submission between grants and contracts. It has requested a total of $383,700 for translation operations in FY 1963, of which $225,000 is earmarked for grants for programming purposes.

Currently active grants are as follows:

T-9	Title - Translation and publication of Russian abstracts.	
	Principal investigator - Dr. M. W. Woerdeman	
	Sponsoring institution - Excerpta Medica Foundation Address - 2 East 103rd Street, New York 29, N. Y.	$56,350
T-14	Title - Review of Soviet literature in radiobiology.	
	Principal investigator - Walter R. Stahl, M.D.	
	Sponsoring institution - Oregon State College Address - Carvallis, Oregon	$ 4,653
T-27	Title - Evaluation of the Academy of Medical Sciences, USSR, Pharmacological Research.	
	Principal investigator - Dr. Walter C. Jaskievicz, S.J.	
	Sponsoring institution - Fordham University, Institute of Contemporary Russian Studies Address - New York 58, N. Y.	$15,639
T-28	Title - Coverage of Soviet biomedical research literature.	
	Principal investigator - G. Miles Conrad	
	Sponsoring institution - Biological Abstracts Address - 3815 Walnut Street, Philadelphia 4, Pennsylvania	$18,807

T-29 Title - Survey of Cerebro-visceral physiology in the USSR.

Principal investigator - Dr. Samuel A. Corson

Sponsoring institution - Psychiatric Research Foundation of Columbus
Address - 473 West 12th Ave., Columbua 10, Ohio $30,612

T-30 Title - Soviet psychiatry and its context.

Principal investigator - Dr. Jason Aronson

Sponsoring institution - Massachusetts General Hospital
Address - Boston 14, Mass. $15,514

b. The following P.L. 480 translations were received and distributed in FY 1962:

Israel		No. pp.
1) Turakulov, Ya. Kh.	- The Metabolism of Iodine and the Thyroid Hormones	197
2) Skulme, K.A.	- The Etiology, Pathogenesis and Early Diagnosis of Cancer and Precancerous Diseases of the Stomach	441
3) Modestov, V.K., Editor	- The Use of Radioisotopes in Clinical and Experimental Investigations	216
4) Nauchno-Issledovatel'skii Institut Eksperimental'noi Khirurgicheskoi Apparatury i Instrumentov	New Surgical Equipment and Instruments and Experience in their use, No. 1	198
5) Idem. - No. 2		144
6) Bakulev, A.N., Editor	- Surgical Treatment of Mitral Stenosis	292
7) Institut Farmakologii i Khimioterapii	Recent Data on the Pharmacology and Clinical Aspects of Phenothiazine Derivatives	186
8) Leningradskoe Nauchnoe Obshchestvo Nevropatologov i Psikhiatrov	Problems of Psychiatry and Neuropathology, v. 1	375
9) Idem. - v. 2		276
10) Chepinoga, O.P.	- The Biological Role of Nucleic Acids	157

11) Akademiya Nauk SSSR, Institut Tsitologii
Problems of Cytology and Protistology 372

12) Akademiya Nauk SSSR
Works of the Institute of Higher Nervous Activity
Physiological Series, Vol. 3 263

13) Akademiya Pedagogicheskikh Nauk RSFSR, Institut Psikhologii
Studies in Higher Neurodynamics as Related to Problems of
Psychology 257

14) Seventeen papers in Genetics from various Soviet Journals 238

Poland

1) Acta Biochimica Polonica
Vol. 8, Nos. 1-4, 1961 471
Vol. 9, Nos. 1-2, 1962 188

2) Proceedings of the Polish Copernicus Society of Naturalists
Artificial Hibernation and Hypothermia, Warsaw. 1961 136

Yugoslavia

1) Acta Medica Iugoslavica)
Vol. 16, No. 1, 1962) In manuscript form

2) Journal of the Medical Association of Croatia)
Vol. 84, No. 1, 1962)

3) Boskovic, M. - The Morphology, the Contents, and the Topography of the Petromastoid Canal in Man.
Acta Medica Iugoslavica - Vol. 12, 1958 30

II. Plans

A. Intramural Activities

1. Firmly planned:

a. For FY 1963

In FY 1963 will come the big push for completing the design, installation and testing of the MEDLARS system. The third and final phase of the MEDLARS project is to begin in September 1962. In the FY 1963 NLM appropriation there is $700,000 budgeted to cover these costs, and this should be ample.

b. For FY 1964

In FY 1964 MEDLARS becomes operational (target date: September 1963). The need at that time will be for people to handle the expanded activities of the operation. It is planned that the staff of the Bibliographic Services Division, responsible for MEDLARS, will be increased by 50% -- from 46 to 72 positions. In addition, the MEDLARS equipment must be rented, or preferably purchased -- prior to this time all that NLM will have bought will have been the system approach itself. There is adequate funding in the FY 1964 budget for both items. The equipment costs alone come to $955,000.

2. Desirable

NLM has projected in its FY 1966 budget an expenditure of $500,000 for a system of miniaturization and rapid retrieval of graphic material, to take the place, in large part, of the present system of turning out photocopies for interlibrary loans, using microfilm cameras and Xerox Copyflo output. It is predictable that within a few years' time the present system will break down from overload. It may be that it would be desirable to advance this program by buying a study and survey of system approaches that might be used, the study to be conducted in FY 1964. No firm plans along this line have been developed.

B. Extramural Activities

Foreword

The NLM has proposed, and is currently implementing, an extramural program designed to strengthen the communication of the published results of medical research. This program is a logical and necessary extension of intramural activities in this field which the Library has carried on without interruption for over 125 years, and which are unique, both in the PHS, and in the nation at large.

Toward a Definition of Research Communication

The general term "communications" is used here in a highly specialized sense: those practices and systems for the transmission of published scientific information across barriers of space and time. Excluded are considerations of mass media practices for the understanding of a lay public, of audio-visual techniques, such as medical television, and mission-oriented programs for communicating special program information to special groups.

It is in this last particular that the Library's functions and objectives differ most widely from those of other constituents of the PHS. The latter are generally conceived as special purpose systems for the transmission of program-generated messages related to the specific mission of the constituent, be it air pollution or mental health.

The Library is concerned with the preservation and strengthening of the scientific record, and the systems which support the accumulation, development and utilization of that record. It is not pertinent to the Library's purposes whether a specific unit of the PHS has been responsible for generating the unit of research information, or whether it was independently generated by an agency of government, or privately in Germany. The Library tends to view research communication from the point of view of its uses; it is oriented to the utilization of published information for the advancement of medical research and practice as a whole.

Why a Library Centered Program

The Library is concerned with the system established for the original publication and dissemination of the results of research (primary publication); with the system established for the analysis and re-synthesis of research publication (secondary publication); and with the system established for the storage and retrieval of published scientific literature (medical libraries). Further, it is concerned with experimental activities in each of these systems, as well as with the strengthening of their present capabilities. These systems are all interrelated, and may be considered as a continuum. Piecemeal patching to serve the purposes of individual missions is less desirable than a comprehensive and coordinated support program.

The Library has unique traditions, capabilities and expertise for undertaking such a comprehensive program. Its intramural activities are in the

same field, and have the same user orientation, with resulting reinforcement of an extramural mission. It is the logical unit within the PHS for the conduct of a comprehensive program designed to strengthen the communication of the results of research.

General Objectives

There are three components of the so-called "crisis in scientific communication." The first is the exponential growth of the literature; the second is a difference in kind of requirements related to the rapid growth of multidisciplinary research; and the third is the requirement for speed in both dissemination and retrieval. The Library's general purpose is to improve research communication, both by enabling existing systems better to cope with the challenges implicit in the above, and by supporting efforts to devise new and non-conventional techniques for the solution of problems these trends have created.

Program Areas

The Library's extramural program is divided into the following program areas:

Scientific Publication (including both primary and secondary publication, translations, and library fellowships);

Medical Libraries (including facilities and resources);

Education and Training;

Research and Development (including both basic studies and applied)

These program areas are considered below in terms of a) mission; b) needs; c) proposed activities, and related needs.

1. Firmly planned

a. Scientific Publications Program (Review of Applications)

1) Mission and Purposes

This section pertains to the NLM Scientific Publications Program which is concerned with the grant and contract support of scientific biomedical publications. This activity must be considered in two parts: a) the primary review of applications, on a PHS-wide basis, for the grant support of publications; and b) the direct support and management, via grants and contracts, of publication projects which, because of their particular nature, come more clearly and properly under the NLM purview as opposed to the Bureaus, Institutes and Divisions of PHS.

The purpose of the review function will be to permit the particular skills which NLM can assemble to be brought to bear, for the

first time formally, on proposals for grant support of scientific publication projects, with the aim of broadening and strengthening the review process and establishing a central policy authority on the support of publications.

2) The Need for Improved Review Processes

In the past, applications to PHS for the support of scientific publications have been handled largely in the same way as applications for the support of research projects. They have been examined by Study Sections, or, on occasion, by ad hoc review groups. The reviews by these mechanisms have not always been considered adequate, since these mechanisms did not usually include the advice of experts professionally involved in the fields of scientific publishing and its many critical facets, forms, and management devices, such as medical librarianship in general, abstracting, indexing, bibliographic services, etc. Thus, while this review mechanism could and did speak to questions of apparent need within a particular biomedical field, it did not speak to questions relating an application to the totality of communication practices in its field and related fields, or to the soundness of the concept of the application in consideration of its stated purpose, or to questions of its compatibility with general publication policies of government support. In short, the review mechanism could answer certain questions of scientific merit and desirability but very few questions pertaining to the technical aspects of scientific publishing and documentation. Applications often were considered without adequate, or any, concern for what other similar activities were being considered or supported by other elements of PHS and DHEW, and other elements of the government.

In consideration of the great diversity of scientific publication activities and in consideration of the fact that these activities can involve separately or in combination all of the many medical and biological disciplines, it is apparent that applications for the support of certain of these activities can be reviewed with greater effectiveness and insight by a group concerned principally with publishing concept and technology, while applications for the support of other types of activities should be reviewed primarily by a Study Section or group expertly oriented toward a particular discipline or field of interest with consultative assistance, as deemed desirable, from the former review group.

For example, many applications concerned with publishing in or research on the various aspects of printed-word communications technology, regardless of the disciplines involved, could be quite adequately reviewed by the NLM Advisory Committee in its basic orientation toward such matters, with recommendations directly to the National Advisory Councils. On the other hand, an application for support to write a review of the status of research in a highly specialized discipline or narrow field of interest, for example, should be evaluated by the DRG Study Section established in that discipline or, on occasion, by an ad hoc panel of experts selected from that discipline.

The long-established PHS practice of encouraging review groups to interchange information and skills to help insure evaluations of

the greatest competence would apply here with particular merit. Because of the breadth and depth of NLM's activities in biomedical publications and in the techniques of their development, management and use, it is believed the NLM staff and/or its Advisory Committee could have beneficial supporting comments of a background nature on nearly all types of applications for printed-word communications projects, even when the prime review responsibility was assigned to a Study Section. Conversely, there will be occasions when the Study Sections could be of valuable assistance to NLM on certain applications for which NLM has the prime review responsibility.

The recommendations then made to the National Advisory Councils by either the Study Sections or the NLM Advisory Committee will reflect assessments with regard to both the scientific desirability and also the publishing and documentation compatibility and technology.

3) Present Activities

On June 22, 1962, the Director, NLM, formally approved the establishment of the Advisory Committee on Scientific Publications. This action was taken under authorities in the General Administration Manual, Chapter PHS 9-00-30, following coordination with the Office of the Surgeon General, and BMS, BEH, BCH, and NIH. The Committee will be composed of 15 non-Federal members (including librarians, experts in abstracting services, scientists, medical school deans, etc.), and eight ex officio members representing NASA, NSF, AEC, the NLM Board of Regents, and the four Bureaus of the PHS. A panel of nominees for membership has been prepared and submitted for approval through PHS channels.

This Committee will assume a major portion of the responsibility for providing primary reviews on applications to the PHS for the grant support of primary and secondary publications and applications for the support of research in printed-word communications.

In consideration of the time necessary for the approval of proposed Committee members, it does not seem possible that the Committee can be finally composed before October 1962. Since the deadline for the receipt of applications for the November round of Study Section and National Advisory Council meetings was July 1 past, the Committee cannot begin its actual review activities until after the November 1 deadline, looking toward the March 1963 round of Council meetings.

In addition, the Division of Research grants has established an office to serve as a reporting and coordinating point for applications and grants concerned with the support of scientific publications and to carry out liaison with NLM.

4) Relationships to Other Programs

The activities of the Advisory Committee and of NLM in this regard necessarily must be closely integrated with the Bureaus of the PHS in regard to the support of scientific publications. Indeed, the

whole purpose and value of the Advisory Committee concept and function will be lost without such integration. For example, it has been noted that this Advisory Committee cannot and should not assume responsibility for reviewing all types of publication support proposals. Many proposals can be so categorical or narrow in terms of subject matter as to require prime attention from the PHS Study Section established in that particular field, with secondary comments from the Advisory Committee. At the same time there will be a great many applications for the support of publication projects which are broad and multidisciplinary or interdisciplinary in nature, requiring prime attention by the Advisory Committee and secondary help from one or another of several Study Sections. The point, as made earlier, is that there must be a close and continual interchange of information and skills.

(On succeeding pages of this report there is information pertaining to the NLM plans for the direct management and support of grants. The point probably should be made that the purview of the Advisory Committee will be somewhat broader in scope than the programs NLM would expect to carry out through the direct management of grant activities, and that the purview of the Advisory Committee will not and should not be affected by the addition to the NLM responsibilities of direct grant management activities. That is, the Advisory Committee should continue its PHS-wide function even though the grants to be supported by NLM may represent a somewhat more narrow field.)

2. Desirable Activities in FY 1963 and beyond

a. Scientific Publications Program (Direct Support and Management of Grants)

1) Mission and Purposes

Highly desirable legislative and organizational authorities in this area would enable NLM, through the support and management of grants for scientific publications, to express and exercise directly its unique talents and knowledge in guiding and expanding a major aspect of the National biomedical communications requirement.

These authorities would permit NLM to design and activate what would be the first PHS grant program specifically in the field of scientific publications and related areas. Various activities under this heading have been carried out through grants for a number of years. These activities have not been given clear-cut program structure or aims. There seldom has been coordination on individual grants and they have been supported by different PHS units -- in the absence of overall policy and program guidance -- often without cooperation or even coordination among the PHS units.

The placement in NLM of a grant program specifically oriented toward the speeding and strengthening of biomedical scientific

printed-word communications, clearly implying the development of new forms and procedures, would seem an obvious first step toward the resolution of many PHS problems in grants for publication support and it would seem to be a major step toward the resolution of many National biomedical communications problems.

2) Need

The need for vast improvements in biomedical communications has been urgently and vividly documented numerous times in recent years. It should be sufficient to say that as communication is an integral part of research and medical care, communication inadequacies are threatening both the quality of biomedical research and the quality of medical care.

Some factors are:

The exponential growth of medical research. Not only has this development added to the flood of information, but it has created thousands of new researchers to struggle with the information.

The exponential growth of the scientific literature. This has international as well as national dimensions.

Increasing specialization and cross fertilization. The sciences use the literature of other disciplines as never before.

The gap between bench and bedside has widened. The need for medical practitioners to utilize research findings has become more acute.

This problem has major scientific and social implications. Communication inadequacies threaten both the quality of medical research, and the quality of medical care. Meeting it will require strengthening traditional mechanisms while new ones are devised.

3) Present Activities

Attention is directed here to the Scientific Translation Program, which includes grants as well as contracts and which is an integral part of the Scientific Publication Program, under Section I.B. (Extramural Activities during 1962) of this report.

With regard to the major legislative and organizational authorities necessary for NLM to support and manage grants directly, these authorities are being sought from within PHS and DHEW and from the Congress. In addition, the Director, NLM, has sent to the Deputy Director, NIH, a memorandum requesting negotiations for the transfer of certain publication support grants from NIH to NLM.

4) Proposed Program

The establishment of a full-fledged grants program within NLM would be the first organizational objective. (It should be noted that this temporarily could be tied into existing PHS grants mechanisms, but obviously the program could have greater force and meaning with the NLM Board of Regents being afforded the necessary legislative authority to make grant recommendations to the Surgeon General.)

The program would have these goals:

In the area of primary publications the effort program aims would be to:

Strengthen existing media (such as journals) for the prompt reporting of research results;

Provide adequate publication outlets for new research fields;

Design and test experimental forms for the primary dissemination of research information.

In the area of secondary publications the effort program aims would be to:

Strengthen existing media for the analysis and resynthesis of biomedical research information in abstracts, indexes, critical reviews, bibliographies, translations, handbooks, and compendia;

Coordinate and relate such activities in the interest of scientific needs, and economic considerations;

Promote new and experimental forms of secondary publication.

The grant and contract support of scientific publications necessarily constitutes a very major part of the total PHS concern for biomedical publications because of the flexibility and diversity of activities afforded by grants and contracts as opposed to the vast organizational and personnel additions that would be required if the PHS were to seek such a breadth of publication activities solely through internal mechanisms.

The realignment, improvement, and expansion of PHS activities in the grant and contract support of scientific publications will aid in the achievement of several critical objectives in the concern of the Service for biomedical communications:

The identification of gap areas in biomedical communication and the design and implementation of activities to meet these requirements;

The reduction and possible elimination of what may be an appreciable level of duplication, repetition, or overlapping of biomedical publication support activities among elements of the PHS;

The improved definition and strengthening of the concepts and mechanisms necessary for extramural support of publishing to become a more direct and effective instrument to aid various PHS programs in achieving their different program objectives.

5) Relationship to Other Programs

These activities, in a manner similar to the NLM application review function discussed previously, must be closely related to other PHS activities. In the interest of avoiding duplication and of filling gap areas, the management of the NLM grants program must exercise close coordination and cooperation with other grant-making agencies of PHS, DHEW, AEC, NASA, etc. In addition, the NLM program would offer a PHS-wide facility for the tremendous value and usefulness of grants and contracts to be brought to bear on problem areas of the various PHS programs where scientific publications are considered a helpful or necessary tool.

It is not difficult to imagine a number of examples where specialized grants and/or contracts in scientific publications could be used to unearth and compile data pertinent to PHS and DHEW programs which do not themselves have grant-making authority.

Because of the fact that scientific publications more often than not are an integral part of the research processes, the NLM activities must complement the grant-making activities of the Bureaus for research and training purposes. It is expected that with the tremendously increasing multidisciplinary and interdisciplinary character of biomedical research the NLM program will be able to offer PHS research activities a new armamentarium of knowledge and skills in printed-word communications bearing directly on the critical problems of the exchange of information between or among disciplines.

It should be made clear that the NLM grant program could not and would not wish to support itself all scientific publications activities in PHS. A considerable number of these activities, particularly in the area of primary publications, are of such highly categorical or disciplinary nature as to justify their support by that PHS grant-making unit with the primary responsibilities for PHS activities in that particular field. Needless to say, there would be some grants in the primary publication field that would come under the NLM programs together with the majority, perhaps, of grants in the secondary publication areas and for research in printed-word communications.

b. Program for Library Fellows

1) Mission and Purposes

The function of the proposed Library Fellows Program is to realize the national and international potential of the Library as a base for the synthesis and consolidation of new medical information through stimulating publication by mature qualified scientists. The program would provide planned and systematic support for the preparation (to be accomplished in residence) and publication of critical reviews of the literature, handbooks, and compilations of data, specialized monographs, bibliographies, and historical studies relating to the medical sciences.

2) The Need

Advances in medical research occur in many fragmented units, representing individual contributions to a large number of problems from a horde of disciplines, and are reported to other research scientists in thousands of individual publications. The integration of new knowledge and the up-dating and reinterpretation of the past are essential to further progress in any field.

By the fact that the NLM systematically receives, indexes, and stores the literature of the medical sciences in all languages and of all time, it makes a tremendous, but as yet only partially realized, contribution to this process. Unfortunately, however, literature research affords only a low financial return and it is generally conceded that financial and other encouragement is needed if the up-dating and reinterpretation of present knowledge is to be enlarged.

3) Proposed Program

The Library proposes placing its unique resources and services at the disposal of mature qualified individuals under a system of fellowships in order to encourage the productivity discussed above. Consequently, both a stipend and the prestige provided by an honorary appointment and title are planned. While senior scientists and scholars would be principally represented at the beginning of the program it may be desirable later to establish fellowships for junior workers. At present it is expected not more than 6-12 fellows would be appointed annually.

4) Eligibility and Conditions

Individuals would be eligible for appointment in the NLM fellowship program if they:

A. were citizens of the U.S. or had filed their declaration of intent to become citizens.

B. possessed a graduate degree, usually the Ph.D or M.D.

C. had demonstrated their ability and productivity in a biomedical scientific field, in scientific bibliography, or in the history of medicine.

D. had the intention of publishing the results of their investigations, In line with this point, it should be noted that the NLM hopes to establish a publications series to which the fellows might, if they wished, offer their work for printing and distribution. It would not be necessary, however, for the fellows to publish therein. The NLM takes the stand that the freedom to publish anywhere is a fundamental principle, and that normal publication channels are generally the proper ones to be used by scientists. The new NLM publications series is meant merely to furnish another possible outlet for scientific and scholarly work and thus cut down on the delays encountered today in the publication of results in these fields.

Since each fellow would be working on his own problem, no set length of time for a fellowship can be postulated. Each request would have to be examined individually, but it is expected that the fellowships would run for not less than 3 months nor longer than 1 year with renewals considered along with new applications. Fellows would normally spend at least 25% of their time in residence at the NLM. Occasional outside teaching, lecturing, or publishing would be encouraged.

5) Relationship to Other Programs

The Service supports a significant number of scientists engaged in the preparation of materials for publication. The proposed program would strengthen this effort through placing the unique resources of the Library at the disposal of grantees. The Deputy Chief, DRG, in 1958 drafted a comparable program of grants for the preparation of critical reviews, which was discussed with the National Advisory Health Council. The closest library precedent for the proposed program exists in the system of consultants developed for the Library of Congress in the 1940's, and still operative in a limited degree.

6) Budget

(in thousands of dollars) FY	64	65	66	67	68	Total
(No. of Fellows	6	8	10	12	12	48
Stipends	50	70	85	100	100	405
Publication Costs	20	40	40	40	40	180
Administrative Costs	15	20	20	20	20	95
Total	85	130	145	160	160	680

C. An International Communications Support Program

1) Mission and Purposes

This program would serve as a principal focus within the Public Health Service for meeting the needs of the American medical research community for access to the published results of biomedical research conducted and published overseas. It would act to strengthen practices through which American scientists keep themselves informed of contributions from other countries and published in languages other than English. It would include, but not be limited to, current translation activities, extending, these to other languages infrequently read by American scientists, concerning itself with support for the preparation of critical review papers, the more adequate provision of abstracts for the foreign literature, the publication of guides and directories to the organization and personnel of foreign biomedical research institutions and similar devices.

2) Need

It is a truism that no country has a monopoly on scientific ability, and that reports of fundamental significance to the advance of knowledge may occur in a variety of languages. It is equally true that the American research community tends to depreciate the values of foreign literature (with a number of obvious exceptions) except when deficiencies of knowledge provide rude awakenings. As the world shrinks, it becomes increasingly important for American scientists to keep informed concerning the advances made by their overseas colleagues and published in unfamiliar languages.

It is also true that English is becoming the lingua francua of science. The Library is aware of the political and scientific implications of this development and has acted to speed this natural evolutionary process.

The essential problem in international communication is to identify the significant contribution early for its rapid communication, and conversely to eliminate the work of secondary significance. This calls for selectivity at a high level of professional competence and argues for the use both within the United States and abroad of professional editorial groups in which these competences reside. Hence, the Program will follow a basic principle of utilizing the editorial expertize existing in the scientific societies and similar organizations.

Translation needs have two dimensions: first, those of individual investigators for specific information; and second, those of groups or research areas for more general awareness. It is not the Library's intention to compete with commercial interests offering satisfaction to the first group of needs through the provision of translation services. The Library would be concerned with the wider use, however, of translations so made through their deposit, duplication, and dissemination. The Library is more concerned with meeting the needs of the members of research groups interested in common topics, and would make every effort to cooperate with such groups in identifying common needs and satisfying them.

3) Present Activities. See section I.B. of this report.

4) Program Functions

The international communication program would operate through grants and contracts to prepare and disseminate information relating to the conduct and results of biomedical research accomplished overseas. The grant mechanism would be used where undirected intellectual activities are preponderant (e.g. critical reviews); contract mechanisms where the Program identifies and specifies work to be done.

In its domestic activities, the Program would develop for the clinical medical sciences a selective translation and publication program comparable to that established in basic sciences areas through the Federation of American Societies for Experimental Biology. It would also undertake a systematic program for the publication of directories to the organization of foreign biomedical research, and a program for the accomplishment of review papers describing the status and trends of research in foreign countries. Expansion of the foreign currency programs is limited to a degree by available manpower resources in the countries where funds are available and research productive. Programming in this area offers challenges. Generally speaking more productive utilization of the available manpower is more desirable than an increased budget. One promising development is the use of Public Law 480 funds to encourage the initial publication of research results in English language journals, a program of benefit both to the country concerned and the United States.

5) Relation to Other Programs

The Foreign Science Information Program of the National Science Foundation is closely related in its objectives and policies to the NLM function. The Office of International Research, NIH, and the Division of International Health, PHS, are each concerned with specialized aspects of the international communication problem. The miscellaneous translation services maintained by PHS Bureaus exist to satisfy local service requirements.

While the Library believes that the communication of United States research results to other countries falls within the purview of such organizations as the Agency for International Development, it is inevitable that the Library will be involved to some extent in advising and assisting foreign institutions and agencies in their efforts to improve communications <u>from</u> the United States.

d. Medical Library Support

Foreword

The country's medical libraries form an information storage and retrieval system of great size and complexity, and one in which the society has made major capital investments. Yet, throughout the years, the medical school libraries have been worsted in the competition for the academic dollar; their percent share of the academic budget has shrunk from 4.3 to 3.9. As a result of chronic inattention, and of the enormously increased service demands created by the growth of medical research, the plight of medical libraries has become desperate. Of all resources supporting the conduct and growth of medical research, those founded on stored scientific knowledge are the weakest.

There are gross and cumulated deficiencies in three respects:

Library facilities
Library resources
Library manpower

In the brief time allowed for the preparation of this report, it has been impossible to compile complete national data on the complex problems of the medical libraries, and a contract has been given to Harvard University for the compilation of such data by September 30, 1962, in time for consideration at the Surgeon General's October conference. In the meantime, to the extent possible with present information and in consideration of the length of this report, this section treats with library facilities and resources. Library manpower deficiencies are covered under the Education and Training section of this report on succeeding pages.

1) Library Facilities Construction Program

A. Mission and Purposes

The function of a library facilities construction program is to provide support, on a matching basis, for the construction of new facilities for medical school and research libraries, and for the remodeling and expansion of existing facilities. This program would be integrated with the existing Research Facilities Construction Program and the proposed Educational Facilities Construction Program (H.R. 4999) with the NLM function limited to technical support in programming and review of applications.

B. Need for Support

Medical school libraries have tended to double in size every twelve years; this rate compares to a sixteen year doubling rate for general research libraries. Micro-reproductions for space saving purposes have not received consumer acceptance, and cannot be counted on to

offset this growth rate. With more literature being published, with research demanding the literatures of more related scientific fields, with more research workers and students consulting the library, and with inadequate space allocation to begin with, the need of medical libraries for more space is desperate.

Except in a very few instances the schools have not been able to assemble private funds for the building of new library facilities. Nor have Federal funds been available to date to assist them.

C. Backgrounds of Federal Support for Library Construction

In the first years of the Research Facilities Construction Program, the Research Facilities Advisory Council considered the admissibility of libraries as a research facility. Other needs were agreed to be more pressing. In 1960, the Council reversed its position, admitted library applications to the extent that they demonstrated "proportionate use" for research, established a review committee, and approved four grants totalling $666,112. Awards have been held up, however, since the summer of 1960 pending a resolution within the PHS of the responsibility for a library support program, and, despite more liberal language in the renewal legislation (H.R. 4999), administrative determination of this responsibility, between NLM and NIH, has not been implemented.

H.R. 4999 would also authorize the construction of school medical libraries, as education facilities. Other bills before the Congress would authorize Federal grants for university and college library construction (H.R. 8900).

The Library's position is that construction support programs within the Service should not be splintered; and that the management function relating to grants for the construction of school medical libraries should reside outside the Library. Its own role would be limited to the provision of expert consultation, and upon request, to the administration of the review function.

D. Estimate of National Need

Under H.R. 4999, library facilities support falls into two categories: educational facilities, and research facilities. In the first category, approximately half of the 87 four-year schools require new facilities, or the remodeling of old ones, over the next ten years. In addition, at a conservative estimate, at least ten new medical libraries must be built.

In the research category, there is a limited but significant number of research-related, non-educational institutions with library construction requirements. The building needs of the Medical Library Center of New York are in point.

A preliminary estimate of the needs may be based on the 17 applications (in both preliminary and final form) submitted to the PHS. These total approximately $14,000,000, of which $11,000,000 represents the construction of new facilities, and $3,000,000 the renovation and expansion of existing facilities. On this basis, it is suggested that the total requirement for the nation may run to $50,000,000 or more over a 10-year period.

E. Operational Proposed Mechanism

On the assumption that H.R. 4999 will be enacted, and that responsibility for its administration will be shared by the Division of Research Facilities and Resources, NIH, and the Hospital Division, BSS, the following plan is proposed:

Funding: DRFR and HD will defend appropriation requests, assisted by the Library, and earmarking specified amounts for library construction.

Review. The Library will establish a review committee for the purpose of recommending grants to the two programs.

Management: DRFR and HD

Programming: Library staff will assist in developing applications, in collecting data, and developing budgets.

2) Library Resources

A. Mission and Purposes

It is proposed to establish a program of medical library institutional grants for the purpose of rehabilitating medical school and research libraries. Such grants would provide Federal support at the rate of 33 1/3 percent of the Library's total budget for the previous year, provided that the school made no decrease in the base amount budgeted for the Library. Subject to the appropriation of funds by the Congress, such grants would be renewable yearly up to a maximum of five years continuations. The Federal contribution could be spent at the discretion of the school, but in specified areas of library resources and services.

B. Need

Growth is the normal healthy state of scientific libraries. Growth rate, however, is not innate, but rather determined by forces outside the control of the library. Some of these forces are:

The increasing volume of literature pertinent to medical research (in part generated by Federal support of medical research).

Changes in both volume and character of demands placed on the library by research.

The character of the research and education programs of the parent institution.

The ability of the parent institution adequately to fund for library support.

The rate of production of published new information is at an all-time high; medical researchers are requiring collections in depth in non-medical disciplines as a concommitant of the multi-disciplinary revolution in the sciences; institutional research and education programs stress the basic sciences, which require library collections in historical depth. Finally, in the competition for the university dollar, funds for the acquisition of books and journals for central library functions for years have not been adequate.

As a result, the medical libraries are falling far behind in their struggle to discharge their responsibilities of providing for the information needs of contemporary medical research and education. It has been said that the medical library network of the country is in imminent danger of collapse, as a result of these accumulated deficiencies.

These deficiencies are not limited to gaps in the collections of books and journals, important as these collections are to the effective conduct of research and educational programs. Other ways in which these deficiencies should be measured are:

Backlogs in cataloging, and organizing materials for use.

Backlogs in binding programs.

Inadequate staffing of loan and interlibrary loan functions.

Inadequate provision of reference services.

The medical library situation is therefore, one of generalized inadequacy. Their resources, organization, staff, and service concepts are perhaps adequate by the standards of the 1930's, but they are trying against odds to maintain even these. They are not adequate for the 1960's.

This suggests a generalized support program with a view to massive rehabilitation, a variant of the institutional grant program already established within the PHS.

C. Support for Operating Expenses

The Service has yet to establish a program which would support the direct operating costs of medical schools, and it may be argued

that the payments to schools for the purpose of buying books and journals, or for that of hiring catalogers to organize them constitutes such support, and establishes an unwelcome precedent. Against this are the following considerations:

The Federal government as a sponsor of research has a vital interest in the adequacy of information resources supporting that research.

The massive program represents a capital investment rather than the assumption of indefinitely continuing operating costs.

The library and its collections constitute a research resource in the same sense that a laboratory and its basic scientific equipment are resources.

D. Funding Requirements

Sixty-six medical schools reporting spent a maximum of $184,000 and a minimum of $7,000 on their libraries in 1959. The median was $58,000. Approximately 50 additional research libraries would be eligible for such assistance. The estimate below is based on the median figure for 150 libraries.

One-third of the median x 150 libraries x 5 years = $12,000,000

E. Stocking New Libraries

A special problem exists in the major capital investments which newly established libraries must make in books and journals before they are able to function. Not only are the basic files of journals high-cost; frequently they are unobtainable for years. This suggests a variation of the above formula, to provide for a matching grant program whereby the Federal government would meet one-half the costs of building a new collection for a period of five years. There would be a minimum Federal contribution of $25,000. An estimate of this requirement follows:

One-half of $100,000 x 10 libraries x 5 years = $2,500,000

It is conservatively estimated that a minimum library for a four-year school of medicine (50,000 volumes) would cost $500,000.

F. Reprinting Programs

Since many files of essential research journals are commercially unavailable, or available only at exorbitant costs, it may become necessary for the Library to stimulate the reprinting, through commercial and

other sources, of such publications. It is proposed to accomplish this through a corporation similar to Franklin Publishers, who handle reprinting contracts with the book trade on behalf of the U. S. Information Service.

G. Legislative Requirements

The Library Resources Program would require new authorizing legislation.

e. Education and Training

1) Mission and Purposes

The education and training program would be directed toward meeting national manpower requirements for personnel with skills in the management, processing, and utilization of the published literature in the biomedical sciences. It would accomplish this purpose through strengthening the curricula of schools engaged in training in medical librarianship and medical informational activities, through increasing the number of adequately trained professional librarians, through improving professional skills of currently employed personnel, and through improving and expanding the available training for professional workers in related information processing technologies.

2) The Need

Manpower needs fall into two basic categories: first, the need for professional medical librarians; and second, the need for training in broad areas of medical communication and information processing technology. The need for the training of medical librarians has two dimensions. Not only are more librarians required, but the skills of currently employed librarians need up-dating.

In general there has been considerable professional attention paid to medical library education. The Medical Library Association has had active committees which have functioned to encourage the establishment of medical library training courses, to establish standards of medical library training, to initiate and police a program for professional certification, and to engage in recruitment activities. The voluntary efforts of the Association members have, however, fallen far short of meeting national requirements for manpower. Evidence for this may be found in the assignment of untrained clerical staff to professional library duties, in the extent to which medical records personnel are expected to perform professional library duties, in the difficulties experiencedby institutions in finding medical library administrators, and in the extent to which librarians transfer from general libraries to medical libraries.

Historically, salary levels have been depressed, discouraging qualified personnel from entering the field; with the changing valuation placed on biomedical research information, the salary levels have been raised, demand has now out-stripped supply, and well trained professional medical librarians constitute a manpower scarcity.

In the absence of a comprehensive survey, it is difficult to estimate the quantity of total manpower needs. There are approximately 1,000 medical librarians in the U. S. today, of which about 500 work in libraries of schools of medicine, dentistry, pharmacy, and nursing. Some 300 are in research and commercial medical libraries, and about 200 are employed in hospitals not part of the above. It is said that some 1,900 other hospitals accredited by the AMA-AHA Joint Committee on Accreditation contain libraries run without trained medical librarians.

In the field of the medical libraries of schools and research institutes, a normal attrition level of 5% occurs, due to retirements, deaths, and permanent withdrawals from medical librarianship. Other factors which influence the manpower needs of libraries are: (1) the growth rate of active libraries, and (2) the founding of new libraries, particularly in new schools of medicine and the allied sciences. It has been estimated that 40 new medical librarians are needed merely as replacements, and that a total of 100 medical librarians could be absorbed annually.

To meet this need the U. S. is today recruiting and training only 35 medical librarians per year who are new to the field. This leaves a deficit of 65 medical librarians annually. If allowed to continue unchecked for 5 years, there would result a deficit of 325 medical librarians; that is at the end of 5 years somewhat more than 1 in every 5 positions requiring a professional medical librarian could not be filled by such a person.

Related to the requirement for medical librarians, there are similar manpower shortages in such areas as medical indexing and abstracting, and in the design, operation, and maintenance of mechanized storage and retrieval systems for medical information. This is the so called "medical documentation" area which is attracting professionals with biomedical training, and for which minimal education and training resources are available. As mechanized systems similar to MEDLARS are developed, needs for courses in computer programming related to the retrieval of published medical information, for example, will become critical. Want ads in daily newspapers testify to the scarcity of trained personnel available for such functions.

Estimates of manpower requirements are even more difficult in this rapidly developing field. It is estimated conservatively that at the minimum 100 individuals should be trained over the next five years.

3) Proposed Program

For the training of medical librarians, the Library proposes a composite program including the following elements:

a. Long-term traineeships leading to academic degrees at the masters and doctorate levels.

b. Short-term traineeships providing for intensive training at an accredited degree-granting institution, designed to improve the skills of currently employed librarians.

c. Training grants to institutions for the purpose of expanding and improving their training facilities by strengthening their teaching staffs and encouraging them to establish specialized courses.

d. Support of post-masters or doctoral degree internship programs in established and qualified medical libraries.

The same general types of programs would be undertaken for the training of professional personnel in information processing technologies, with particular reference to the support of short-term academic institutes.

4) Related Programs

Individual incidences of these training needs have been supported through grants from the Public Health Service. In recent years grants have been made to the University of Illinois for the holding of a post-graduate seminar on medical library administration, and to Emory and UCLA, for internship programs. The national manpower needs for specially trained librarians and science information personnel have been under close study by the Office of Science Information Service, National Science Foundation, which has sponsored the publication of a report on the education and training of science information personnel, as well as a specialized training course offered by the Biological Communication Project, American Institute of Biological Sciences. The national need for the training of librarians generally finds expression in title 4 of H. R. 11823, currently before the General Subcommittee on Education of the House Education and Labor Committee. This bill would authorize $10,000,000 a year for the holding of short-term or regular session institutes for the provision of training to improve the qualifications of libraries and individuals preparing to engage in library work.

5) Authority for Education and Training

It should be pointed out that the Library's existing authorities are not adequate for the conduct of a program in education and training, and that new legislation will have to be sought for this purpose.

6) Mechanisms

In conducting this program, the Library would establish a training grant committee for the purpose of reviewing applications. In the absence of legislation authorizing the Library's Board of Regents to recommend grants for training to the Surgeon General, the balance of the preliminary review would be accomplished by referral to the National Advisory Health Council. The Library would provide program development, administrative and management functions, through an education and training program staff.

7) Budget

	FY 64		FY 65		FY 66		FY 67		FY 68	
	No.	Cost*	No.	Cost*	No.	Cost*	No.	Cost*	No.	Cost*
Long-Term (New students)	20	88	25	110	50	220	75	330	100	440
Short Term	25	7.5	35	12	50	16.5	60	19.5	75	24
Internships	6	86	15	165	20	220	20	220	20	220
Institutions	8	18	[illegible]	22.5		45	6	67.5	6	90
Privately Supported	35		35		35		35		35	

f. Research and Development in Medical Communications

1) Mission

The Research and Development Program is intended to support investigation at two levels: first, into the principles and practices which underlie naturally evolved systems for the communication of research information; and second, into experimental devices and solutions which offer promise for the improvement of research communication practices. This latter involves support for demonstrations of the application of new technology, as well as limited support for the development of new technical devices.

2) Needs

Since Vannevar Bush published his account of MEMEX in 1945, a major objective of the Federal and non-governmental agencies concerned with the problems of scientific communication has been to explore and develop new devices to replace elements of the traditional systems. Attacks on these problems have been made in fields of machine storage and retrieval, machine translation, auto-abstracting, computer based indexing, facsimile transmission, and many others.

Invariably these attacks have experienced limited successes, but the scientific, economic and political motivations behind them are formidable, and the possible benefits from break-throughs great.

Experience has shown that a fundamental reason for limited success in the past has been a general ignorance of the characteristics, functional relationships, purposes and objectives of the naturally evolved communication practices. The technologies involved have outstripped theory; there is no common agreement among scientists as to guidelines they should give the engineers. Since the problem is essentially one of information logistics, involving close controls over units of information to insure their motility from place to place and time to time, it constitutes a complex more susceptible to operations research procedures than to the engineer's drafting board.

The Library's Research and Development Program recognizes both the sociological and the technological aspects of the problem. It would operate to support studies which would describe and quantify the functions and activities which make up natural communication systems, viewing these essentially as sociological phenomena. Concurrently, where a base in theory exists, or where the need is patent, it would provide support for the development of special purpose solutions, including, but not limited to, mechanized ones. Again, it would be concerned with the testing of non-conventional solutions under controlled conditions, and to this end would support demonstrations.

3) Related Programs

The Documentation Research Program of the Office of Scientific Information Service, NSF, accents support of basic investigations into the principles and theory of scientific communication. 1/ The

---

1/ Brownson, H. L.: Research on Handling Scientific Information. Science, 132: 1922-31. (Dec. 30, 1960)

Advisory Committee on Computers in Research, NIH, touches on this field, with special attention to computer applications for storage and retrieval of information. In its report to the Director, NIH, the Committee staff has estimated that about 5% of applications in the computer field would fall into the information storage and retrieval category. The Department of Defense, particularly the Air Force Office of Scientific Research, have ongoing development programs of considerable size. The Office of Basic Instrumentation, NBS, offers consultation services on the application of computers to the information storage and retrieval problem. Finally, this area is related to the Library's intramural planned program activities centering in the MEDLARS program.

4) Relationship to MEDLARS

In addition to and in supplementation of the research and development objectives previously described, the Library would devote concentrated attention to programming for extending and developing the unique capabilities of the MEDLARS system. In developing these capabilities, certain basic principles underly the MEDLARS concept:

Access to the literatures of the biomedical sciences has two dimensions, physical and bibliographic. The physical access should be strongly decentralized through libraries and information centers. The provision of bibliographic access should be a centralized function.

The biomedical literature is so vast that only the processes of irreducible units of information (citations) can possibly be justified within dollar and equipment limitations.

It is sound both economically and logistically to conceive of MEDLARS as a unique capability based on a unique institution. The multiplicity of MEDLARS systems, if engaged in competitive analysis of the comprehensive literature of medicine, is indefensible. A more proper objective is to exploit to the maximum secondary and derivative systems based on the parent organization.

It is in this context that the Library proposes a long range program for the development of MEDLARS capabilities. In doing so the Library is fully aware of the precedents it would establish. MEDLARS is the only mechanized storage and retrieval system developed to date for an "open" user group. Other general systems (e.g. ASTIA, CIA, NASA) are designed for use by restricted clientele. Other specialized systems are concerned with but small fractions of the literature.

This circumstance not only raises questions of public policy, but also raises to a high order of magnitude the groups, agencies, and institutions which MEDLARS and its derivative systems may be called on to service. The Library is aware of both the opportunities and challenges, and is responding to them by planning the outlines of a National system for the storage and retrieval of published medical information based on a centralized MEDLARS

operation. At the same time, sufficient experience has accumulated both within and without the Library to argue for a realistic step-by-step approach in the development of such a National system. The Library's operational responsibilities are heavy; it is fully aware of the many practical difficulties which will present themselves, and the impediments to their rapid solution.

The areas in which the Library intends to develop MEDLARS utilization are as follows:

A. Support of secondary publication activities in biomedical research.

The MEDLARS contract called for the provision of 50 concurrent listing services tailored to meet the requirements of any research field. The Library staff has had discussions with the National Heart Institute concerning the configuration of such listings, and has collected over 50 preliminary applications from interested scientific groups and services asking benefits from them. A significant number of these fall in the area of abstract support of secondary publications of various types.

The citations printed out by MEDLARS will provide a bibliographical substrate for a large variety of specialized services where these are both scientifically desirable and economically justifiable. In this regard MEDLARS will provide a base for specialized abstracting services, for the preparation of review papers, compendia, handbooks, etc. which may meet the changing requirements of medical research. The potential for these activities will be multiplied upon the realization of the objective described in (B.) below.

B. Decentralized search centers.

Once magnetic tapes have been prepared for the MEDLARS system, the cost of providing duplicate tapes will be minimal. The Library would propose support of the establishment of up to 50 regional search centers to be supplied with duplicate tapes. These would be of two types: Search only, and Search of Complete MEDLARS System. It is believed that special purpose computers could be devised for searching MEDLARS tapes at a cost of approximately $200,000 each. The computers would be limited in speed, capacity, and usability, but would effectively search the citations supplied by the Library. Each computer could provide up to 10 searches daily of the MEDLARS file. The Library would be interested in developing such a special purpose computer and in programming for the establishment of a National search system.

The MEDLARS system itself can be duplicated for approximately $1,500,000. The Library would propose the installation of complete MEDLARS systems in three regional centers on the east coast, middle west, and west coast, Devoted exclusively to search and listing services, and not to the preparation of the Index Medicus, such systems would increase the listing service potential by a factor of 10, thereby making it possible to provide up to 500 current listing services for research purposes. This development could proceed at modest cost on an experimental basis through the rental of computer time, since the capacities of high speed graphic arts composing equipment would not be required.

C. Compatability with other systems.

A final long range objective is that of working toward optimum practical compatability with electronic storage and retrieval system being developed in other areas of science and technology. The objectives here are to enable scientists to draw upon multiple systems for their information with minimum difficulties in translation between the elements of the various systems.

III. State of Planning

The Library's preliminary extramural budget estimates for FY 63 were based on its existing authorization: Sec. 371-377 and Sec. 301 of the PHS Act, the latter restricted to the translation of foreign scientific documents. Subsequently, the restriction was eliminated by Senate Committee action, but the appropriations were not increased over the Library's preliminary estimates.

Only those activities which can be conducted within the FY 63 budget and those on which actions leading to comparative transfers of funds are described as "firmly planned" in the recapitulation below.

A. Scientific Publications Program

It is intended to activate and develop the Science Publications Program during FY 63. The state of its development is summarized below.

Authorization: Sections 301 and 372 of the PHS Act.

Clearances: Approval of the S.G. and the Interbureau Advisory Committee for Extramural Programs for the establishment of an Advisory Committee; Bureau Chief clearances; close working liaison established with DRG/NIH; request made of Deputy Director, NIH to initiate comparative transfers for support of certain grants; delegation of authority under Sec. 301 requested of S.G.

Resources: Library currently supporting personnel, travel, and administrative costs; DRG to fund costs of Advisory Committee; comparative transfers to be negotiated with Institutes and Bureaus for support of mutually agreed project grants.

B. Science Translation Program

This program will be continued as an organizational unit of the Scientific Publications Program during FY 63.

Authorization: Sections 301 and 372 of the PHS Act. PL 480, Sec. 104k; P.L. 86-610; Exec. Order 10,900.

Clearances: Approval of S.G. for transfer from DGMS/NIH; approval of S.G. for reconversion of program in FY 62; review procedures using Advisory Committee cleared with DRG/NIH; use of National Advisory Health Council cleared with DGMS/NIH.

Resources: The following are budgeted in FY 63:

Contracts:	150,000
Grants:	225,000
Foreign currencies	356,000

C. Library Fellowships Program

Authorization: The Library considers it desirable to secure an amendment to Sec. 372 of the PHS act to provide adequate basis in law for this program.

Clearances: Not yet initiated.

Resources: Staff work to be undertaken by Scientific Publications staff; no budgetary provisions made.

D. Medical Library Facilities Construction Program

Authorization: Current authorization limited to Health Research Facilities Construction Act, as amended. Possible future authorization under HR 4999, when passed. NLM has no authorization permitting it to seek funds directly.

Clearances: Discussions with S.G. and Director, NIH Delegation of responsibilities has not been clarified. Operational liaison with RFCP/NIH and with Division of Hospital and Medical Facilities, BSS.

Resdurces: Limited staff services from NLM; minimal funds could be reprogrammed for studies of needs.

E. Medical Library Resources Program

Authorization: The Library believes new legislation would be required. This program can be interpreted as supporting the operating costs of medical schools.

Clearances: Not initiated.

Resources: The NLM has minimal funds for staff planning functions. Minimal funds could be reprogrammed for studies of needs.

F. Education and Training

Authorization: Since this function is not authorized by Sec. 301, the NLM believes it essential to seek new authority through an amendment to Sec. 372.

Clearances: Discussions at operating levels with multiple PHS training programs.

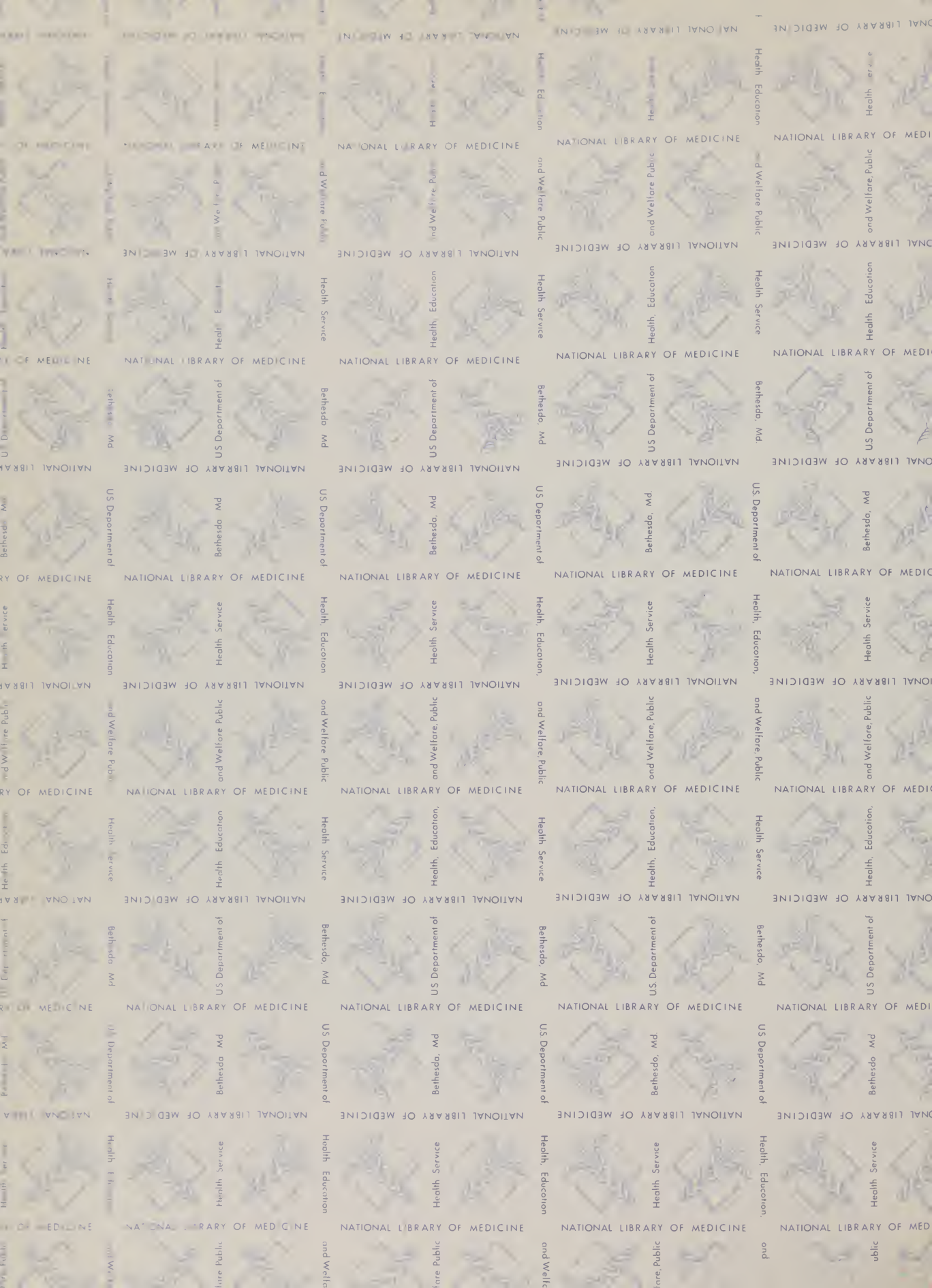
Resources: NLM has minimal funds for staff planning functions, NLM will avail itself of services in the Office of Education with minimal reprogrammed funds.

G. Research and Development

Authorization: Currently authorized under Sec. 301.

Clearances: Not initiated.

Resources: NLM has devoted minimal effort to staff planning functions.


NATIONAL LIBRARY OF MEDICINE
Health Education
Health Service
US Department of
Bethesda, Md
and Welfare Public
Health, Education,

NATIONAL LIBRARY OF MEDICINE
Health Service
Health Education
and Welfare Public
U.S. Department of
Bethesda, Md

JUL 31 1967